



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,558	02/14/2004	Jy-Jen F. Sah	GP-304123	9003

7590 04/05/2007
 Leslie Hodges
 General Motors Corporation, Legal Staff
 Mail Code: 482-C23-B21
 P.O. Box 300
 Detroit, MI 48265-3000

EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT	PAPER NUMBER
----------	--------------

3661

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/779,558

Applicant(s)

SAH ET AL.

Examiner

Christine M. Behncke

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/18/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the application filed 14 February 2004, in which claims 1-12 were presented for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7 and 11-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27 of copending Application No. 10/686,510. Although the conflicting claims are not identical, they are not patentably distinct from each other because the mere recitation of the claimed limitations in different formats does not make the claims of the present application patentably distinct over the claims of the abovementioned copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tabata et al., US 5,833,570.

(**Claim 1**) Tabata et al. discloses a method for controlling a shift from a first mode to a second mode in a multi-mode, electromechanical transmission including an input member and an output member, first and second torque transfer devices, at least one motor (figure 1), first mode operation characterized by simultaneous first torque transfer device applied and second torque transfer device released (column 2, line 59-column 3, line 18, column 13, line 10-column 14, line 67), second mode operation characterized by simultaneous first torque transfer device released and second torque transfer device applied (column 13, line 10-column 14, line 67), neutral mode operation characterized by simultaneous first and second torque transfer devices released wherein the transmission output member is mechanically decoupled from the transmission (column 14, lines 7-37), and fixed-ratio operation characterized by simultaneous first and second torque transfer devices applied wherein the transmission input member is mechanically coupled to the transmission output member through a fixed ratio (column 2, line 50-

Art Unit: 3661

column 3, line18), comprising: while in one of the first and second modes, releasing the one of the first and second torque transfer devices that is applied to establish neutral mode operation (column 16, lines 23-50); controlling slip speed across one of the first and second torque transfer devices to substantially zero (column 17, lines 15-58); and, applying the one of the first and second torque transfer devices across which slip is being controlled when the slip thereacross is substantially zero (column 4, line 25-column 6, line 30).

(Claim 11) Tabata et al. discloses a method for controlling a shift from a first mode to a second mode in a multi-mode, electro-mechanical transmission including an input member and an output member, first and second torque transfer devices, at least one motor (figure 2), first mode operation characterized by simultaneous first torque transfer device applied and second torque transfer device released (column 2, line 59-column 3, line18, column 13, line 10-column 14, line 67), second mode operation characterized by simultaneous first torque transfer device released and second torque transfer device applied (column 13, line 10-column 14, line 67), neutral mode operation characterized by simultaneous first and second torque transfer devices released wherein the transmission output member is mechanically decoupled from the transmission (column 14, lines 7-37), fixed-ratio operation characterized by simultaneous first and second torque transfer devices applied wherein the transmission input member is mechanically coupled to the transmission output member through a fixed ratio (column 2, line 50-column 3, line18), and a preferred operating region for first mode operation on one side of the fixed ratio and a preferred operating region for

Art Unit: 3661

the second mode of operation on the other side of the fixed ratio (figure 19), comprising: when the first mode of operation is active within the preferred operating region therefor and the output member experiences a rate of change of speed in excess of a preset threshold (column 16, lines 22-50), executing a shift through the neutral mode comprising (column 16, lines 23-50); releasing the first torque transfer device, controlling slip speed across the second torque transfer devices to substantially zero, and applying the second torque transfer device when the slip speed of the torque transfer device is substantially zero (column 16, lines 23-50, column 4, line 25-column 6, line 30).

(**Claims 2 and 12**) Tabata et al. further discloses wherein controlling the slip speed across the one of the first and second torque transfer devices is accomplished by adjusting motor torque (column 20, lines 15-24).

(**Claim 3**) Tabata et al. further discloses wherein controlling slip speed terminates when the one of the first and second torque transfer devices across which slip is being controlled is fully applied (column 23, lines 23-60).

Claim Rejections - 35 USC § 102

4. Claims 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoshiya, US 6,019,699.

(**Claim 8**) Hoshiya discloses a method for controlling a shift from a first mode to a second mode in a multi-mode, electromechanical transmission including an input member and an output member, first and second torque transfer devices, at least one motor (figure 2), first mode operation characterized by simultaneous first torque transfer

Art Unit: 3661

device applied and second torque transfer device released (figure 5), second mode operation characterized by simultaneous first torque transfer device released and second torque transfer device applied (figure 5), neutral mode operation characterized by simultaneous first and second torque transfer devices released wherein the transmission output member is mechanically decoupled from the transmission (figures 4 and 5), fixed-ratio operation characterized by simultaneous first and second torque transfer devices applied wherein the transmission input member is mechanically coupled to the transmission output member through a fixed ratio (column 2, lines 22-56), and a preferred operating region for first mode operation on one side of the fixed ratio and a preferred operating region for the second mode of operation on the other side of the fixed ratio, comprising: when one of the first and second modes of operation is active within the preferred operating region for the other of the first and second modes of operation (column 2, lines 36-56), executing a shift through the neutral mode comprising: reducing output member torque to substantially zero (column 2, lines 36-56), releasing the one of the first and second torque transfer devices that is applied (figure 7, column 6, lines 37-55), determining which of the first and second modes is desired (column 5, lines 26-50), controlling to substantially zero the slip speed across the one of the first and second torque transfer devices which when applied establishes the desired one of the first and second modes (column 6, lines 37-55), applying the one of the first and second torque transfer devices that will establish the desired one of the first and second modes (column 6, lines 9-20), and increasing output member torque to non-zero (column 6, lines 37-65).

(**Claim 9**) Hoshiya et al. further discloses wherein reducing output torque to substantially zero includes ramping output torque at a predetermined rate (figures 6 and 8).

(**Claim 10**) Hoshiya et al. further discloses wherein controlling slip speed is accomplished by adjusting motor torque (column 6, lines 37-65).

Allowable Subject Matter

5. **Claims 4-7** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

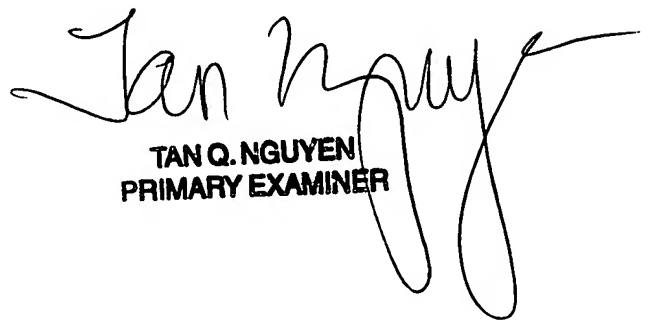
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB



TAN Q. NGUYEN
PRIMARY EXAMINER